Dear reviewer,

Thank you for your prompt response and your valuable comments. we revised the manuscript to apply your comments and clarify the ambiguities and unclear parts. Please see the marked changes in the revised manuscript. Moreover, we have provided proper response and further detailed explanation to every single question and comments as follows:

1- Several quantities in almost all equations are not described anywhere in the paper.

In the revised version, we defined all parameters that had been remained undefined.

2- The reason for the cross-talk is unclear. Why there should be cross-talk at the input of the amplifiers? In a MIMO system, cross-talk among antennas at the output of power amplifiers is much more likely?

A complete explanation is added in the introduction part. As explained there, Authors in [5] (ref [5] in the manuscript which it is the first work on nonlinear crosstalk and is introduced by iRadio lab, the lab where we did our measurement) classified the crosstalk and coupling effect in a MIMO system as either linear or nonlinear crosstalk depending on where crosstalk occurs. Nonlinear crosstalk refers to the coupling which takes place before the PA as the main source of nonlinearity in the system. Therefore, the RF signal passes through a nonlinear device. The main source of this type of crosstalk may be the coupling between MIMO paths where they are implemented on a same chipset or the RF leakage signal through the common local oscillators [15]. On the other hand, the coupling between antennas at the transmitter and receiver which occurs after PAs, introduces linear crosstalk.

In [5], it in the Sec-II-B, it is explained that the effect of linear crosstalk (antenna coupling) can be considered as a part of channel matrix and can be modeled in the MIMO equations as two matrices which it can be embedded to the channel matrix. However, unlike linear type, nonlinear crosstalk cannot be compensated by the conventional matrix inversion at the receiver, and therefore, essentially, should be considered in nonlinear modeling. Therefore, the effect of nonlinear crosstalk must be compensated in the DPD.

3- A single programmable signal generator should be sufficient to generate all required signals.

In the lab, we load each signal into one signal generator and we use the signal generator as a DAC and up- converter. Therefore, we assign each signals to each signals. In the MIMO system, the signal for the first and second branch is different and uncorrelated. The signal generated for the each MIMO path passes through its specific PA. Moreover, for a multi-band system, the signal for different bands are not the same, normally signal at the at the f1 and f2 frequency bands are generated, then the RF signals are combined using a power combiner and finally, the output of power combiner is connected to the dual-band PA. [6-10]. Therefore, for a 2x2 dual band MIMO system, we need 4 different signal generators where we have 4 different input signals. Fig. 1 is provided to depict the system block diagram.

Due to the lack of enough number of synchronous VSGs in our lab, two VSGs were allocated to the MIMO paths. Hence, the complex envelope of input signals at lower, middle, and upper frequency bands for each MIMO path were shifted in frequency, aggregated in baseband, and then up-converted to RF. However, in this technique, the frequency separation between the bands is limited where the maximum sampling rate of VSG is 100 MHz. Since the performance of the proposed DPD architecture is completely independent of frequency separation between two carriers, it is apparent that this setup can be employed to validate the model.

4- The connections of the measurement setup on figure 1 are unclear. please draw a clear block diagram of what is being done.

Fig. 1. is added to depict the block diagram of the system and clarify the measurement setup. Also, please see the explanation for the comment 3.

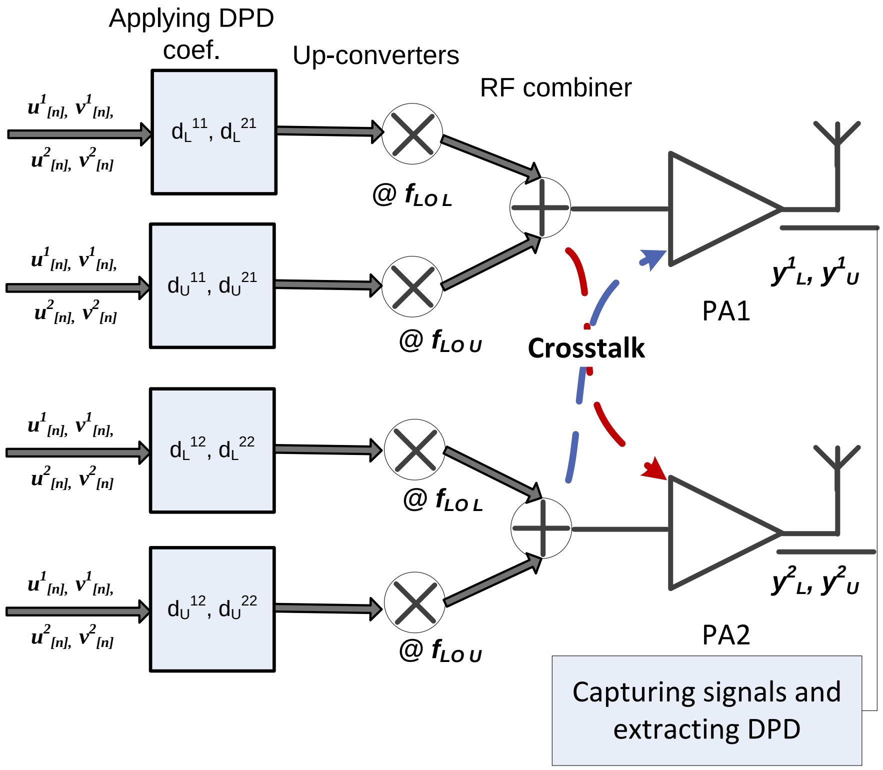

Fig. 1. The block diagram of a 2×2 dual-band MIMO system with DPD.